

BRIEF DESCRIPTION OF THE DRAWINGS

The present invention will become more fully understood from the detailed description given hereinbelow and the accompanying drawings which are given by way of illustration only, and thus are not limitative of the present invention, and wherein:

5 Fig. 1a is a block diagram of the virtual oven concept according to the invention showing logically grouped modules, the association of the test equipment with each logical group, and the arrangement of test equipment outside of an environmental stress screening room;

10 Fig. 1b is a block diagram of the virtual oven concept according to the invention showing logically grouped modules, the association of the test equipment with each logical group, and the arrangement of test equipment inside of an environmental stress screening room;

15 Fig. 2 is a conventional temperature profile showing how the temperature of the environmental stress screening room may be changed;

20 Fig. 3 is a block diagram showing switches that permit the test equipment to be time-shared among modules of a logical group;

 Fig. 4 is a block diagram virtual ovens according to the invention in which the test instruments are connected to the modules via a network and in which plural virtual ovens are connected over the network to a database;

 Fig. 5 is a block diagram showing operative connections within a virtual oven testing optical communications modules;

 Fig. 6a is a block diagram showing alternative equipment and operative connections within a virtual oven testing optical communications modules;

Fig. 6b is a block diagram showing additional alternative operative connections within a virtual oven testing optical communications modules;

Fig. 6c is a block diagram showing operative connections within a virtual oven testing generalized modules;

5 Fig. 6d is a block diagram showing alternative equipment and operative connections within a virtual oven testing generalized modules;

Fig. 6e is a block diagram showing alternative equipment and operative connections within a virtual oven testing optical communications modules and capable of noise-loading and/or degrading the test signal strength;

10 Fig. 7 is a high-level block diagram showing an Internet-based architecture for connecting various components of the invention;

Fig. 8 is a flowchart showing details of a method of conducting burn-in testing according to the invention for two modules;

15 Fig. 9 is flowchart showing details of a method of conducting burn-in testing according to the invention for three or more modules;

Fig. 10 is a screen display of a graphical user interface according to the invention;

Fig. 11 is a high-level data relationship diagram illustrating the inventive database that may be used with the inventive systems and methods;

20 Fig. 12 is a mid-level data relationship diagram illustrating test equipment command and communication table details of the inventive database that may be used with the inventive systems and methods;

Fig. 13 is a mid-level data relationship diagram illustrating command table and test & equipment table details of the inventive database that may be used with the inventive systems and methods;

Fig. 14 is a mid-level data relationship diagram illustrating result table and process table details of the inventive database that may be used with the inventive systems and methods; and

Fig. 15 is a mid-level data relationship diagram illustrating product table and test criteria table details of the inventive database that may be used with the inventive systems and methods.

DETAILED DESCRIPTION OF INVENTION

The following detailed description of the invention refers to the accompanying drawings. The same reference numbers in different drawings identify the same or similar elements. Also, the following detailed description does not limit the invention. Instead, the scope of the invention is defined by the appended claims and equivalents thereof.

As shown in Fig. 1a, the inventive system 1 utilizes an environmental stress screening room (ESSR) 5 that is a conventional chamber having known heating and cooling equipment, thermocouples for measuring an internal temperature, and a temperature control unit. Such ESSR's are commercially available from a variety of companies. The ESSR 5 is typically controlled to change its internal temperature according to a predefined temperature profile such as the one shown in Figure 2.

Although the invention is primarily intended to subject modules 15 to a temperature profile, the ESSR 5 is not limited to merely changing its internal temperature. Indeed, any